



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,918	03/01/2006	David Roberts McMurtry	122070	7252

25944	7590	08/29/2007
OLIFF & BERRIDGE, PLC		
P.O. BOX 19928		
ALEXANDRIA, VA 22320		

EXAMINER	
BRAINARD, TIMOTHY A	

ART UNIT	PAPER NUMBER
3662	

MAIL DATE	DELIVERY MODE
08/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/518,918	Applicant(s) MCMURTRY ET AL.	
	Examiner Timothy A. Brainard	Art Unit 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>PTO-1449</u> |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 26, 29-31, 35, 40, 43-45 are rejected under 35 U.S.C. 102(e) as being anticipated by McMurty et al (US 2002/0122178). McMurty teaches (claim 26, 43, and 44) an apparatus for measuring the straightness of a plane and one of pitch and yaw of a body with respect to another body comprising a transmitter unit on the first body, an optic unit on the second body, the transmitter directing a beam at the optical unit, at least one detector detecting at least two or more light beams the detection of two or more light beams is substantially the same (fig 8 and para 57 and 2), the displacement of the two or more light beams one the detectors enables the straightness error in one plane, pitch or yaw relative to the second body, orienting the transmitter unit along two axes of the base unit and measuring the lateral displacement of the light beam on the detector to determine the squareness of those axes, adjust the position of the transmitter unit of the second body to maintain the light beam of the detector during relative movement, (claim 26) three light beams are detected such that pitch, roll, yaw, or straightness errors in two planes are determined (fig 8 and para 46), (claim 30) optic

Art Unit: 3662

unit is provided with two or more optical elements to reflect two or more light beams (fig 8 and item 105 and 109), (claims 31) the optical elements are retro reflectors, the two of more light beams remain substantially parallel (fig 8 and item 105 and 109), and (claim 40) one light beam where an optical fiber separates the light source from the start of the projected light beam (para 13)

The applied reference has common Inventors (McCurty and Champman) with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 26, 27, 29-33, 35, are 41-45 rejected under 35 U.S.C. 102(b) as being anticipated by Beckworth Jr (US 4939678). Beckworth (claim 26, 43, and 44) teaches an apparatus for measuring the straightness of a plane and one of pitch and yaw of a body with respect to another body comprising a transmitter unit on the first body, an optic unit on the second body, the transmitter directing a beam at the optical unit, at

Art Unit: 3662

least one detector detecting at least two or more light beams (fig 5 and col 5, lines 21-42), the detection of two or more light beams is substantially the same, the displacement of the two or more light beams on the detectors enables the straightness error in one plane, pitch or yaw relative to the second body, orienting the transmitter unit along two axes of the base unit and measuring the lateral displacement of the light beam on the detector to determine the squareness of those axes, adjust the position of the transmitter unit of the second body to maintain the light beam of the detector during relative movement (col 8, line 12-33), (claim 27) displacement of the two or more light beams incident on the detector enables measurement on the roll error (fig 5 and col 5, lines 51 to col 6, lined 6), (claim 29) three light beams are detected such that pitch, roll, yaw, or straightness errors in two planes are determined (fig 5 and col 5, lines 51 to col 6, lined 6), (claim 30) optic unit is provided with two or more optical elements to reflect two or more light beams (fig 5 and col 8), (claims 31-33) the optical elements are retro reflectors (col 8), (claim 32) the retro reflectors are positioned side-by-side in the optical unit and a third retro reflector is positioned behind the first and second retro reflectors (fig 5 and col 8), (claim 35) the two or more light beams remain substantially parallel (fig 5), (claims 41 and 42) the optical elements are mounted on a thermally stabilized bar to reduce movement of the optical element, (claim 45) the transmitter unit is mounted on an adjustable base unit on the first body where the position of the transmitter unit by adjusting the base unit (col 1, lines 22-36).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beckworth (US 4939678). Beckworth does not teach a common equation used to determine different deviations. It is expected that a common equation would be used to determine different deviations.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beckworth as applied to claim 26 above, and further in view of Ross III et al (US 2002/0122172). Ross III teaches one detector being a pixilated image sensor. It would have been obvious to modify Beckworth to include one detector being a pixilated image sensor because it is one of multiple design choices with no new or unexpected result.

Claim 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beckworth as applied to claim 26 above, and further in view of Kilibjian (US 5335548). Kilibjian teaches two light beams transmitted from the light source wherein the coherence pattern of the detected beams and the beams are intensity modulated to cause frequency variation to reduce the coherence pattern of the detected beams (abs). It would have been obvious to modify Beckworth to include two light beams transmitted from the light source wherein the coherence pattern of the detected beams and the beams are intensity modulated to cause frequency variation to reduce the coherence

pattern of the detected beams because each is one of multiple design choices with no new or unexpected result.

Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beckworth in view of Kilibjian as applied to claim 38 above, and further in view of Inada (US 4999618). Inada teaches two light beams intensity modulated by turning the light source on and off (col 2, lines 50-55). It would have been obvious to modify Beckworth in view of Kilijian to include two light beams intensity modulated by turning the light source on and off because it is one of multiple design choices with no new or unexpected result.

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beckworth as applied to claim 26 above, and further in view of Qu (US 6343228). Qu teaches one light beam where an optical fiber separates the light source from the start of the projected light beam. It would have been obvious to modify Beckworth to include one light beam where an optical fiber separates the light source from the start of the projected light beam because it is one of multiple design choices with no new or unexpected results.

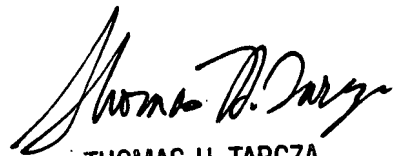
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy A. Brainard whose telephone number is (571) 272-2132. The examiner can normally be reached on Monday - Friday 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (571)272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3662

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TAB



THOMAS H. TARCZA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600